

## **II. OFFICE OF ENVIRONMENTAL MANAGEMENT CERCLA COMPLIANCE**

### **II.A DOE Organizations Responsible for CERCLA Compliance**

This report is prepared by the Department of Energy's (DOE's) Office of Environmental Restoration (EM-40) within the Office of Environmental Management (EM). The Office of Environmental Management was created in 1989 to consolidate responsibility within DOE for environmental management activities at former nuclear weapons complex sites. Within the EM organization, the following offices contribute to CERCLA compliance at former nuclear weapons complex sites:

- The Office of Waste Management (EM-30) is responsible for the treatment, storage, and disposal of large volumes of wastes generated by environmental restoration activities;
- The Office of Environmental Restoration (EM-40) is responsible for the cleanup of facilities formerly in the nuclear weapons complex and for facility decommissioning as well as other radioactively contaminated sites that Congress has requested DOE to clean up;
- The Office of Technology Development (EM-50) is responsible for the development of new and more effective technologies to address contamination and management of wastes at DOE sites;
- The Office of Nuclear Material and Facility Stabilization (EM-60) is responsible for nuclear materials stabilization, facility deactivation, and the safe transition of facilities for decommissioning by the Office of Environmental Restoration; and
- The Office of Site Operations (EM-70) is responsible for providing policy and guidance to improve the effectiveness of crosscutting environment, transportation management, and waste minimization activities.

DOE's Office of Environmental Policy and Assistance (EH-41) within DOE's Office of Environment, Safety and Health (EH) assists all DOE organizations with CERCLA compliance activities and serves as the CERCLA Docket Coordinator. The Coordinator receives the EPA's initial letter of proposed listings to the docket and NPL, and is responsible for verifying the accuracy of the proposed listings with the program and field offices in a formal response to the EPA.

This report also covers CERCLA compliance activities at sites that are not in the nuclear weapons complex. Figure I-1 shows the locations of these and all other DOE CERCLA facilities/sites. Information on these sites was provided by the following DOE organizations:

- BPA, which markets and transmits power from 29 Federal dams and one non-Federal nuclear plant in the Pacific Northwest. BPA owns and operates over 300 electrical substations and maintains 15,012 circuit miles of transmission lines. BPA is responsible for the DOE electrical substations and electrical substation support facilities that are subject to CERCLA Section 120.
- WAPA, which is responsible for the Federal electric power marketing and transmission functions in 15 central and western states encompassing a 1.3 million-square-mile geographic area. WAPA provides power to more than 600 wholesale power customers. These wholesale power customers, in turn, provide service to millions of retail consumers in the States of California, Nevada, Montana, Arizona, Utah, New Mexico, Texas, North Dakota, South Dakota, Iowa, Colorado, Wyoming, Minnesota, Nebraska, and Kansas. WAPA is responsible for the DOE electrical substations and electrical substation support facilities that are subject to CERCLA Section 120.

- Office of Science which is responsible for energy research and development laboratories subject to CERCLA Section 120.
- Federal Energy Technology Center - Morgantown which is owned and operated by DOE as a research and development center. During 1992 and 1993, it was DOE's lead research center for local gasification, fluidized-bed combustion, unconventional gas recovery, gas stream cleanup, heat engines, fuel cells, underground coal gasification, oil shale retorting, combined-cycle component integration, and instrumentation and control technologies. The environmental management program at the DOE Federal Energy Technology Center - Morgantown addresses all areas of environmental concern, including surface water and groundwater quality, air quality, and solid and hazardous waste disposal. The Morgantown Energy Technology Center (now the Federal Energy Technology Center - Morgantown) is responsible for the DOE alternative energy technology research and development facilities that are subject to CERCLA Section 120.
- Federal Energy Technology Center - Pittsburgh which is the Federal government's most comprehensive coal technology research center. It performs a major role in the Department of Energy's mission to ensure an adequate supply of clean energy from coal. The research programs emphasize new technologies that hold promise for increasing the industrial use of clean coal in the long term. The Pittsburgh Energy Technology Center (now the Federal Energy Technology Center - Pittsburgh) is responsible for the DOE alternative energy technology research and development facilities that are subject to CERCLA Section 120.

However, EM assumes CERCLA compliance responsibility for some of the above mentioned organizations for remediation at their sites.

## **II.B. Progress in Reaching Interagency Agreements**

CERCLA Section 120(e)(2) requires that within 180 days after the U.S. Environmental Protection Agency's (EPA's) review of an RI/FS, the Federal facility must enter into an Interagency Agreement (IAG) (i.e., an agreement between DOE, EPA, and often the affected state) for the expeditious completion of all necessary remedial action. DOE has, however, entered into IAGs addressing both the RI/FS and the implementation of remedial action before the RI/FS is completed at all of its NPL listed sites. Interagency Agreements are revised, as necessary, such as the Hanford Tri-Party Agreement documents in 1998 and the Rocky Flats Cleanup Agreement in 1996 in order to incorporate new information, adjust schedules, and address changing conditions.

Interagency Agreements are known by different names at different sites. The DOE has entered into the following types of IAGs addressing CERCLA remediation: Federal Facility Agreements (FFAs), Federal Facility Consent Agreements, and a Tri-Party Agreement at Hanford. The names of the IAGs used by the sites are those cited in this report.

The DOE has concluded an IAG within 180 days after EPA review of an RI/FS at all NPL sites where RI/FSs have been completed. The sites for which IAGs had not been concluded at the end of fiscal year 1998 (FY 98) [Laboratory for Energy-Related Health Research, CA and Pantex Plant, TX] were added to the NPL during fiscal year 1994 (FY 94). IAGs are currently being negotiated at these sites. DOE, EPA Region IX, and the State of California are currently negotiating a FFA for cleanup of LEHR. This agreement is expected to be signed in FY 99. NPL deletion activities are in progress at Pantex, and if successful, an IAG will not be required.

### **II.C. Specific Cost Estimates and Budgetary Proposals To Support Environmental Restoration Activities Required by the IAG**

The site summaries presented in Chapter III contain dollar amounts that support the environmental restoration activities that are being performed pursuant to CERCLA and/or the Resource Conservation and Recovery Act (RCRA) as specified in the IAGs. Consequently, these dollar amounts may not represent the entire environmental restoration budget for the site.

The FY 98 amount in each summary box represents actual dollars spent in FY 98. The fiscal year 1999 (FY 99) amount is the appropriated funding, and the fiscal year 2000 (FY 00) amount is the request in the President's Budget.

### **II.D. Public Comments Regarding Proposed Interagency Agreements**

During FY 98 no new IAGs were proposed. Consequently, there were no public comments regarding proposed IAGs.

### **II.E. Instances in Which No Interagency Agreement Was Reached**

There is no instance where DOE has failed to reach an IAG within 180 days of the completion of the EPA's review of an RI/FS. As mentioned earlier, the NPL sites where DOE has not yet entered into IAGs (the Laboratory for Energy-Related Health Research (LEHR), CA and Pantex Plant, TX) were placed on the NPL in FY 94. The DOE expects to sign IAGs for these facilities before the RI/FSs for these facilities are completed. Ongoing NPL deletion activities at Pantex Plant, if successful in the future, may make an IAG unnecessary.

### **II.F. Progress in Conducting Remedial Investigations/Feasibility Studies at NPL Sites**

CERCLA Section 120(e)(1) specifies that RI/FS work must be initiated within six months after a site is listed on the NPL. RI/FS work was initiated within this statutory time frame at all DOE facilities on the NPL.

### **II.G. Environmental Contamination at DOE Facilities**

The CERCLA Annual Report addresses environmental contamination at the following types of DOE facilities:

- Facilities formerly in the nuclear weapons complex (i.e., production facilities, laboratories, and testing facilities);
- Electrical substations and electrical substation support facilities;
- Energy research and development laboratories; and
- Facilities involved in research and testing activities associated with alternative energy technologies.

## DOE Facilities Formerly in the Nuclear Weapons Complex

Figure I-1 shows the locations of DOE facilities subject to CERCLA Section 120. The environmental contamination problems at facilities formerly in the nuclear weapons complex are unlike those associated with facilities in other industries. These problems include unique radiation hazards, unprecedented volumes of contaminated water and soil, and a vast number of contaminated structures including reactors and chemical plants. Major environmental contamination problems associated with steps in the nuclear weapons production process are briefly described below.

- Uranium mining and milling produced large volumes of mill tailings which contain toxic heavy metals and radioactive radium and thorium;
- Uranium enrichment operations caused extensive contamination of the environment with radioactive materials, solvents, polychlorinated biphenyls (PCBs), heavy metals, and other toxic substances;
- Fuel and target fabrication resulted in releases of uranium dust, landfills contaminated with chemicals, and contaminated facilities;
- Reactor irradiation produced highly radioactive spent fuel and contaminated facilities;
- Chemical separations produced highly radioactive and hazardous chemical waste, as well as wastewater that contained small amounts of radionuclides and chemicals. Discharge of some of this wastewater directly to the ground caused widespread contamination. Chemical separation processes also produced contaminated facilities;
- Fabrication of weapons components produced plutonium-contaminated waste and facilities;
- Weapons assembly and maintenance resulted in soil contaminated with high-explosive waste, fuel and oil leaks, and discharged solvents; and
- Research, development, and testing activities resulted in highly radioactive underground craters and soils and debris contaminated with low-level waste.

In most cases, the environmental contamination caused by nuclear weapons production activities resulted from materials production and waste management practices that would be considered inadequate by today's standards. Additional information on the environmental contamination resulting from nuclear weapons production is available in the following DOE publications:

- *Closing the Circle on the Splitting of the Atom: The Environmental Legacy of Nuclear Weapons Production in the United States and What the Department of Energy Is Doing About It*, January 1996 (second printing);
- *Taking Stock: A Look at the Opportunities and Challenges Posed by Inventories from the Cold War Era*, January 1996;
- *Charting the Course: The Future Use Report*, April 1996;
- *The 1996 Baseline Environmental Management Report*, June 1996 (DOE/EM-0290);
- *Accelerating Cleanup: Paths to Closure*, June 1998 (DOE/EM-0362); and

- *Estimating the Cold War Mortgage: The 1995 Baseline Environmental Management Report*, March 1995 (DOE/EM-0232).

These publications may be ordered from the Environmental Management Information Center at 1-800-7EM-DATA.

### Other Facilities

Other facilities in the DOE complex include electrical substations; facilities supporting electrical power distribution; petroleum and oil shale reserve facilities; and petroleum, coal, oil shale, and energy research facilities. Environmental contamination problems at these types of facilities are generally similar to those found at these types of facilities in the private sector. These problems resulted primarily from spills and leaks.

## **II.H DOE's Accelerating Cleanup: Paths to Closure**

The EM program is responsible for the cleanup of radioactive, chemical and other hazardous wastes that were left after 50 years of United States production of nuclear weapons and associated nuclear research and development activities. A major portion of EM's cleanup program is conducted under CERCLA.

In 1996, EM established a vision of accelerating cleanup efforts to complete cleanup activities at as many sites as possible by 2006. Under this vision, EM set goals for completing cleanup at 43 sites by 2006; at the ten remaining sites, including the five largest sites, treatment was expected to continue beyond 2006. EM has a strong commitment to work with stakeholders, Tribal nations, and regulators in the implementation of the *Paths to Closure* effort and vision. A document entitled *Paths to Closure* was released in June 1998, and was intended to provide Congress, stakeholders, regulators, and Tribal nations with a global view of EM's cleanup mission, ongoing issues, accomplishments, and vision.

EM has made significant progress toward achieving its cleanup goals and realizing the *Paths to Closure* vision. Over the last two years, EM has been successful in redesigning the management structure of the work scope for the entire EM complex and in implementing a revised management system that places greater emphasis on performance goals and accountability.

*Paths to Closure* established a comprehensive management tool that provided:

- An integrated path forward for the management of the EM program, based on a site-by-site, project-by-project life-cycle foundation;
- A basis to evaluate EM's annual budgets in the context of long-term cleanup and closure requirements and projections; and
- A response to the concerns of Congress, stakeholders, regulators, and Tribal nations.

*Paths to Closure* also reflected an individual site's best judgement of options for achieving EM's goals of accelerated cleanup while maintaining its commitment to protect the health and safety of the public, workers, and the environment.

*Paths to Closure* is not an action plan or a decision making document. EM will continue to update its cleanup estimates to reflect actual progress, and to make individual decisions in accordance with the applicable requirements of CERCLA and other applicable statutes. *Paths to Closure* describes the estimated

scope, schedule, and costs for projects where CERCLA decisions have already been made and those for which such decisions have not yet been made. In the latter cases, *Paths to Closure* makes planning assumptions about future CERCLA decisions in order to develop scope, schedule, and cost estimates; however, such assumptions do not bias future CERCLA decisions.

Most cleanup decisions are made at the site level (with appropriate Headquarters oversight). Decisions that have complex-wide implications are made by DOE Headquarters. The EPA or state environmental regulators in effect are often the final decision-makers for cleanup work conducted under CERCLA and RCRA because of their regulator approval rules. EM's role is to comply with schedules negotiated with state and federal regulators for conducting studies, proposing recommended courses of action, and implementing actions once regulators have made decisions.

Public participation is an important element of the EM program's decision making process. For projects managed under CERCLA, EM relies on the CERCLA process to incorporate public participation opportunities.

## **II.I. Approach to Environmental Restoration Used by Other DOE Organizations**

### **Bonneville Power Administration**

BPA currently has 13 sites on the docket. All docket sites have been determined by EPA to require No Further Action under CERCLA, with the exception of the Covington Substation, which is pending a determination by EPA Region X.

The majority of environmental restoration activities at BPA are voluntary cleanups conducted under state authority. The most common contaminant encountered at these sites is non-PCB mineral oil. The contamination is usually contained within the soils immediately surrounding oil-filled equipment. These sites are commonly identified when construction projects or major site modifications involve soil disturbance.

BPA also is in the midst of a long-range multi year voluntary polychlorinatedbiphenyls ( PCB) capacitor replacement program. The purpose of the program is to replace PCB-containing electrical capacitors (which routinely fail, resulting in reportable PCB releases and localized soil contamination) with non-PCB capacitors. This involves taking the substation out of service, removing the old capacitor yard equipment (including metal support racks), excavating soil contaminated in the past with PCBs, and constructing a new non-PCB capacitor yard. In some cases a new yard must be constructed first and brought on line to avoid shutting down a crucial substation; then the old yard can be removed and cleanup initiated. This program is very expensive, not because of soil remediation costs as much as costs associated with purchasing new capacitors and properly incinerating old PCB capacitors. Due to budgetary constraints and operational issues, several substations are prioritized for capacitor replacement each year. Originally, about one-fourth (90 to 100) of BPA's 363 substations had electrical equipment that contained PCBs.

### **Western Area Power Administration**

WAPA has nine sites listed on the docket and does not have any sites currently listed on the NPL. The Administration has taken a proactive role by implementing a Facility Evaluation Program. The purpose of this program is to evaluate all WAPA facilities for sources of oil, hazardous substances, pollutants, or contaminants and suspected releases into the environment. WAPA has also proactively conducted PA/SIs at sites that are potentially contaminated. The Montrose Power Operations Center, located in Montrose, Colorado, notified EPA of hazardous waste storage activities in the early 1980s, as did the Watertown

Substation in Watertown, South Dakota, and Casper Maintenance Yard in Casper, Wyoming. None of these sites are RCRA hazardous waste treatment, storage, or disposal facilities, but because they had facilities for storage of PCB wastes, the sites were listed on the docket. PAs and screening SI final reports have been completed and submitted to EPA.

#### Federal Energy Technology Center - Morgantown

Federal Energy Technology Center - Morgantown is listed on the docket. The program focuses primarily on the treatment and disposal of industrial, contaminated, and sanitary wastewater; the disposal of solid and hazardous wastes; the minimization of air pollutant emissions; the monitoring of surface water, groundwater, and air quality at the Federal Energy Technology Center - Morgantown site and in the surrounding area; the decommissioning, decontamination, and disposal of onsite research facilities no longer in use; and the identification, characterization, and cleanup of offsite property where Federal Energy Technology Center - Morgantown sponsored research and development activities.

#### Federal Energy Technology Center - Pittsburgh

The Federal Energy Technology Center - Pittsburgh is listed on the docket. It has developed and implemented a program to identify and evaluate inactive hazardous waste disposal sites to determine the necessity of remediation. This program included a Phase I Site Sampling and Analysis Investigation, whose scope included reviewing present and historical operations of DOE facilities at Federal Energy Technology Center - Pittsburgh, particularly as they related to hazardous material use, storage, disposal, and handling. Additionally, previous environmental investigations at the site were reviewed. The previous environmental work was supplemented by the Sampling and Analysis Investigation, and a comprehensive database for the DOE facilities has been compiled.

The Sampling and Analysis Investigation investigated soils, surface water, stream sediments, and groundwater throughout all the areas at the Federal Energy Technology Center - Pittsburgh that are occupied or potentially impacted by DOE operations. The work plans included a Sampling and Analysis Plan for the investigation of soils, surface waters, and stream sediments, and a Comprehensive Groundwater Protection Management Plan for the investigation of groundwater. An additional component of the Sampling and Analysis Investigation was an Underground Storage Tank Management Plan, which reviewed the compliance status of DOE-managed underground storage tanks, sought to confirm the uncertain disposition or existence of a number of tanks, and investigated the potential for residual contamination due to the operation or removal of these tanks.

### **II.J. Remediation Progress at DOE Sites/Facilities**

EM has developed a methodology to measure the progress of remediation at EM facilities on the NPL. For each facility, EM determines the number of release sites and facilities. A release site is defined as a unique location where a hazardous, radioactive, or mixed waste release has occurred or is suspected to have occurred. It is usually associated with an area where wastes or substances contaminated with wastes have been disposed of, treated, stored, and/or used. A facility is defined as a uniquely identifiable building or structure where a hazardous, radioactive, or mixed waste release has occurred or is suspected to have occurred. Sometimes a facility is a room or a part of a building. Release sites and facilities will hereafter be referred to as release sites.

Environmental Management places each release site in one of three remediation phases or categories:

- Assessment - a site undergoing a preliminary assessment or in the study phase. Documents in final

form have not been submitted to the regulator for either a remedial action or no response action decision.

- Cleanup - the site is in the final design or remediation phase. This phase includes all cleanup work until documentation has been submitted to the proper authorities for approval. It does not include interim or removal actions unless the removal action is expected to constitute the final action.
- Completed - a response action is considered complete once a no action decision has been made and the documentation sent to the regulators, or physical remediation has been completed and the documentation has been submitted to the regulators.

Figure II-1 displays the current progress of the approximately 6,600 release sites for those DOE facilities on the NPL through the assessment, cleanup, and completed phases.

To determine what phase of restoration (i.e., assessment, cleanup, or completed) a release site is to be assigned for a fiscal year, EM uses the following assumptions:

- If a release site's remedial activities were completed before the end of the fiscal year (September 30 for that year), the release site is determined to be "completed";
- If a release site has completed the assessment phase but has not yet completed the remediation activities within a given fiscal year, the release site has been determined to be in the "cleanup" phase; and
- If a release site has not completed its assessment activities before the end of the fiscal year, the release site has been determined to be in the "assessment" phase.

For those release sites where the assessment phase and completed phase occurred in the same fiscal year, the release site has not been included in the cleanup phase for any fiscal year.

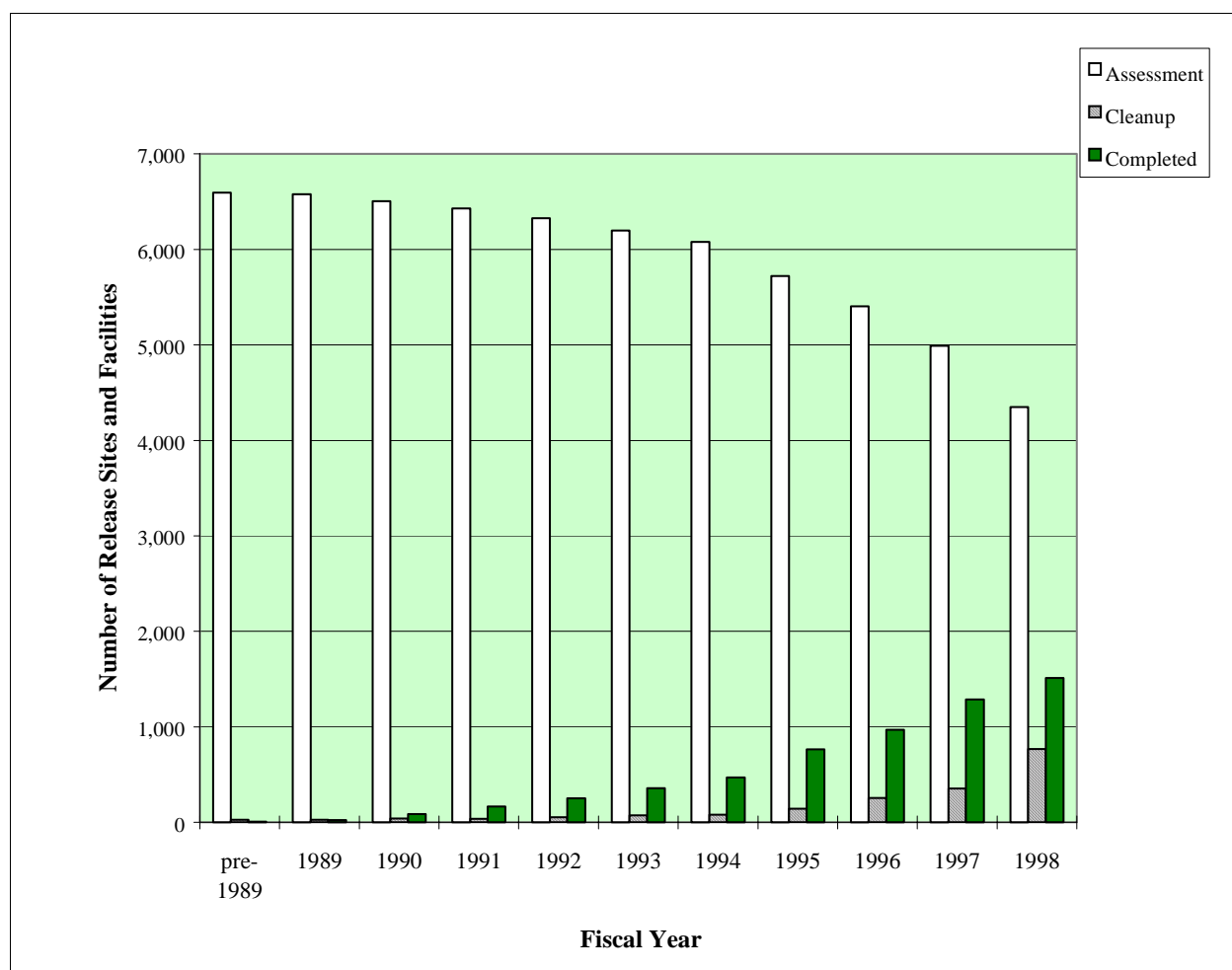


Figure II-1. Number of DOE Release Sites in Different Phases of Remediation

This Page Intentionally Left Blank